

CLAIMS

1. A power conversion unit for a powered movable window covering, the unit
5 including:
power conversion circuitry having a transformer;
a snubber circuit for absorbing power from the transformer; and
a housing containing the power conversion circuitry and snubber circuit;
wherein
10 the snubber circuit provides power absorbed from the transformer to the power
conversion circuitry.
2. A power conversion unit according to claim 1 wherein the snubber circuit
provides absorbed power to the primary side of the transformer.
15
3. A power conversion unit according to claim 1 or 2 wherein the transformer
includes high frequency ferrite transformer cores.
4. A power conversion unit wherein the power conversion circuitry includes a
20 rectifier for converting mains power to DC power and an inverter for converting the
DC power to high frequency AC power for supply to the transformer.
5. A power conversion unit according to claim 4 wherein the high frequency
is over 100 kHz.
25
6. A power conversion unit according to claim 4 or 5 wherein the inverter can
invert the DC power to high frequency AC power with a fluctuating frequency.
7. A power conversion unit according to claim 6 wherein the frequency
30 fluctuates between 250 kHz and 300 kHz.
8. A power conversion unit according to claim 1 or 4 wherein said housing
has a cross section suitable for insertion into a headrail of a window covering.

9. A power conversion unit according to claim 8 wherein said housing is elongate in a direction substantially perpendicular to said cross section.

10. A power conversion unit according to claim 9 wherein the power
5 conversion circuitry includes first and second circuit boards extending in said elongate direction, the first circuit board supporting at least said transformer and the second circuit board supporting at least other components of the power conversion circuitry.

10 11. A power conversion unit according to claim 10 wherein the transformer is divided into a plurality of serially connected sub-transformers arranged along the first circuit board in an array in the elongate direction.

12. A power conversion unit according to claim 10 wherein large
15 components, such as capacitors, are supported at one or both ends of one or both of the first and second circuit boards and extend generally in the elongate direction.

13. A power conversion unit according to claim 11 wherein large
components, such as capacitors, are supported at one or both ends of one or both of
20 the first and second circuit boards and extend generally in the elongate direction.

14. A power conversion unit according to claim 10 wherein the first and
second circuit boards are joined end to end so as to form a single elongate circuit
board.

25

15. A power conversion unit according to claim 11 wherein the first and
second circuit boards are joined end to end so as to form a single elongate circuit
board.

30 16. A power conversion unit according to claim 12 wherein the first and
second circuit boards are joined end to end so as to form a single elongate circuit
board.

17. A power conversion unit according to claim 11 wherein large components, such as capacitors, are supported at one or both ends of one or both of the first and second circuit boards and extend generally in the elongate direction.
- 5 18. A power conversion unit according to claim 13 for use with a headrail having a rotatable shaft extending along the headrail at a generally central position, the housing having a cross section suitable for insertion into the headrail on generally one side of the rotatable shaft.
- 10 19. A power conversion unit according to claim 10 wherein the first and second circuit boards extend in generally parallel spaced apart planes so as to define at least a central space therebetween.
- 15 20. A power conversion unit according to claim 19 for use with a headrail having a rotatable shaft extending along the headrail at a generally central position, the housing having openings at each end in line with the central space such that the housing can be inserted in the headrail with the rotatable shaft extending through the central space.
- 20 21. A power conversion unit according to claim 20 wherein the housing includes end caps at each end, the end caps defining said openings.
- 25 22. A power conversion unit according to claim 20 wherein the housing includes an inner wall defining an elongate central passageway extending through the housing in the central space, the passageway allowing the shaft to be located extending through the housing.
- 30 23. A headrail for a window covering including the power conversion unit of claim 1.
24. A headrail according to claim 23 including a rotatable shaft extending generally centrally along the length of the headrail.

25. A window covering assembly including the headrail of claim 23 or 24.

26. A method of providing power to a powered movable window covering using conversion circuitry with a transformer to obtain relatively low voltage supply
5 from mains supply, the method including:

providing in the conversion circuitry a snubber circuit for the transformer, the snubber circuit absorbing power from the transformer and supplying power absorbed from the transformer back to the conversion circuitry such that heat generation from the conversion circuitry with the transformer is minimised; and
10 mounting the conversion circuitry in the headrail of the window covering so as to reduce the overall size of the window covering.

27. A method according to claim 26 further including:
supplying the transformer with high frequency AC power and using high
15 frequency ferrite cores in the transformer.

28. A method according to claim 27 further including fluctuating the frequency of the high frequency AC power.